



End-To-End Testing In Cypress

Description

End-to-End Testing With Cypress

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A positive user experience in any application is essential to keep customers loyal to the product or brand. End-to-end testing is done to evaluate this user experience as well as any other bugs in tasks and processes that any application might have. The testing approach starts from the end user's perspective and simulates a real-world scenario.

End-to-end testing and its benefits

End-to-end testing covers parts of an application that unit tests and integration tests seldom cover. The primary reason is that unit tests and integration tests take a part of the application and assess the functionality of that part in isolation. Even if these isolated parts of the application work well individually, there is no guarantee that they will work seamlessly as a whole. Applying end-to-end testing allows you to test the functionality of the entire application.

End-to-end testing is reliable and widely adopted because of its many benefits, such as:

- Reduction in efforts and costs
- Increase in the application productivity
- Detection of more bugs
- Expansion of test coverage
- Information on the application's health
- Reduction in time taken for the launch of the application in the market
- Tests are done from the end user's perspective
- Holistic approach

As an application scales to a greater level of complexity with additional features, adding even a small padding or margin can break the application in several places. At this stage, it becomes expensive to hire test engineers who will test the flow of the application in different scenarios from an end user's perspective. To mitigate this, automated end-to-end testing tools can be used to reduce the time taken to test an application and the costs related to software product testing.

Studies suggest that global cybercrime costs will reportedly rise by almost 15% annually over the next four years. If you are not convinced about the importance of cybersecurity in curbing these threats, the following points will help you understand its significance.

Choosing Cypress as your automated testing tool

As applications evolve, so does the requirement for a testing tool that can handle different types of frameworks like Ruby on rails, Django, modern PHP, etc. There are many automated end-to-end testing tools available in the market, the most well-known being Selenium. But, in this article, we will focus on the capabilities of Cypress as the choice for an end-to-end testing tool.

- **What is Cypress?**

Cypress is a comparatively new automated testing tool that is quickly gaining popularity. It is based on JavaScript and is built for the modern web. Contrary to the popular myth that Cypress can only be used to test JavaScript or node friendly applications, Cypress can actually be used to test any type of application.

It was created to address the pain points QA engineers face while testing an application and is also developer-friendly. It operates directly in the browser and uses a unique Document Object Model (DOM) manipulation technique. Cypress allows you to create unit tests, integration tests as well as end-to-end tests. It is designed particularly for front-end developers.

Pros of using Cypress

- Whenever you run a test on Cypress, it opens up a browser that allows you to see the tests being executed as well as the flow of the application in real-time, side by side. It also allows you to go back to the beginning and check which tests have failed and what that test's output was, which is quite helpful in pinpointing and fixing bugs seamlessly.
- In addition to taking a screenshot of the test, Cypress also allows you to record a video of the entire testing process. This helps developers better visualize the bug and where the bug is occurring in the application.



- One of Cypress’s most powerful use cases is that it can run in your Continuous Integration (CI) pipeline. Anytime there is a change in your codebase, your CI pipeline will automatically run all your Cypress tests to ensure that nothing has broken in your application.
- Cypress also offers the option of parallelization, where different tests can run with multiple Cypress agents at the same time. The benefit is that it greatly reduces the overall time for running your tests.

- The code, the library, and the vocabulary used in Cypress are beginner friendly.

Cons of using Cypress

- One of the main cons of using Cypress is that it does not allow testing of features which require the application to open another tab or browser. This is because, in Cypress, all the tests are performed in a single browser tab.
- At the moment, Cypress does not provide support for browsers like Safari and Internet Explorer.

Conclusion

Automated end-to-end testing tools have proved their benefits and are here to stay for the long run. Cypress is the next-generation testing tool, and its growing popularity is attributed to the fact that it is open-source and is constantly evolving. Its pros outweigh its cons, and is an excellent alternative to Selenium as an end-to-end testing tool.

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